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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/529,806

08/01/2005

Clark D. Turner

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04/14/2006

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EXAMINER

MIDKIFF, ANASTASIA

ART UNIT

PAPER NUMBER

2882

DATE MAILED: 04/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/529,806

Applicant(s)

TURNER, CLARK D.

Examiner

Anastasia Midkiff

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 August 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

The use of the trademarks Bluetooth® and FireWire® have been noted in this application. They should be capitalized wherever they appear and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 6, 7, 10, 11, 14, 17, 20, 21, and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to Claims 6 and 10, the phrase “shaped substantially in the form of a camera,” renders the claim indefinite as it is not understood.

With respect to Claims 7, 11, 14, 17, 20, 21, and 24, the phrase, “a plurality of low voltage power supplies with each power supply providing a power ranging from about 20 to about 50 kV,” renders the claims indefinite as this voltage range is not considered in the art to be “low voltage.”

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4, 6, 8-10, 12, 13, 15, 16, 18, 19, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent to Skillicorn et al. (USP# 5,077,771).

With respect to Claims 1 and 19, Skillicorn et al. teach a portable x-ray device, and method for making said device, comprising: providing a housing (12) containing an x-ray source (44) and an integrated power system (Column 3, Lines 42-52); and providing detecting means structurally unattached to the housing (Column 3, Lines 11-13).

With respect to Claim 2, Skillicorn et al. further teaches that detecting means is electrically coupled to the x-ray device (Column 3, Lines 11-13).

With respect to Claim 4, Skillicorn et al. further teach the device comprises integrated display means (30, 42).

With respect to Claims 6 and 10, as it is best understood, Skillicorn et al. further teach the housing is shaped substantially in the form of a camera (Figure 1).

With respect to Claims 9, 13, and 16, Skillicorn et al. teaches system for x-ray analysis, containing a portable x-ray digital camera comprising: a housing (12) containing an x-ray source (44), an integrated power system (Column 3, Lines 42-52),

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and integrated display means (30, 42); and detecting means structurally unattached to the housing (Column 3, Lines 11-13).

With respect to Claims 8, 12, 15, and 18, Skillicorn et al. teach that the x-ray source is shielded with a low-density insulating material containing a high-Z substance (Column 7, Lines 42-44).

With respect to Claim 21, Skillicorn et al. teach a method for analysis comprising: providing a housing (12) containing an x-ray source (44) and an integrated power system (Column 3, Lines 42-52) with detecting means structurally unattached to the housing (Column 3, Lines 11-13), and powering the x-ray source using the integrated supply system (Column 3, Lines 44-48).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7, 11, 14, 17, and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skillicorn et al., as for Claims 1, 9, 13, 16, and 19 above, and in view of U.S. Patent Application Publication to Oettinger et al. (PGPUB# 2005/0018817).

With respect to Claims 7, 11, 14, and 17, as they are best understood, Skillicorn et al. teach most of the elements of the claimed invention, but do not teach the power

system comprises a plurality of low voltage power supplies with each power supply ranging from about 20 to about 50 kV.

Oettinger et al. teach a system for analysis with a portable x-ray device (10), wherein the housing (600, 700, 800) contains an integrated power system (118), said power system comprising a plurality of low voltage power supplies in the form of batteries (Abstract, Lines 8-10) to provide a light-weight compact structure (Paragraph 6, Lines 7-11). Examiner notes that batteries known to be used in such a power supply are capable of providing a power ranging from about 20 to about 50 kV, and that since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233 (CCPA 1955).

It would have been obvious to one of ordinary skill at the time of the invention to incorporate the plurality of low voltage power supplies of Oettinger et al. in the system of Skillicorn et al. to provide a light-weight and compact power source that is field-portable, as taught by Oettinger (Paragraph 6).

With respect to Claims 20 and 22, Skillicorn et al. teach most of the elements of the claimed invention, but do not teach providing the power system with a plurality of low voltage power supplies with each power supply ranging from about 20 to about 50 kV.

Oettinger et al. teach a system for analysis with a portable x-ray device (10), wherein the housing (600, 700, 800) contains an integrated power system (118), said power system comprising a plurality of low voltage power supplies in the form of

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batteries (Abstract, Lines 8-10) to provide a light-weight compact structure (Paragraph 6, Lines 7-11). Examiner notes that batteries known to be used in such a power supply are capable of providing a power ranging from about 20 to about 50 kV, and that since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233 (CCPA 1955).

It would have been obvious to one of ordinary skill at the time of the invention to incorporate the plurality of low voltage power supplies of Oettinger et al. in the system of Skillicorn et al. to provide a light-weight and compact power source that is field-portable, as taught by Oettinger et al. (Paragraphs 6-7).

Claims 3 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skillicorn et al., as for Claim 1 above, and in view of U.S. Patent to Schulze-Ganzlin et al. (USP# 5,514,873).

With respect to Claims 3 and 23, Skillicorn et al. teaches most of the elements of the claimed invention, but does not teach that detecting means electrically communicates with the x-ray device using wireless technology, or that x-rays impinge in the teeth of a patient.

Schulze-Ganzlin et al. teach a free-standing portable x-ray radiation detector (Abstract), and method for its use, with a wireless transceiver for input and outfeed of electrical signals (2, and Abstract), such signals known to be capable of controlling an x-

ray radiation source (Column 1, Lines 18-25), which is compact and reusable (Column 2, Lines 22-31) for use in dental radiography (Column 3, Lines 4-9).

It would be obvious to use the detector of Schulze-Ganzlin et al. in the system of Skillicorn et al. to provide a detecting means which is capable of communicating with the x-ray source, and is suitable for hygienic uses such as dental radiography, as taught by Schulze-Ganzlin (Column 2 Lines 22-31, and Column 3 Lines 4-9).

Claim 24, as it is best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Skillicorn and Schulze-Ganzlin et al., as applied to claim 23 above, and further in view of Oettinger.

With respect to Claim 24, Skillicorn et al. and Schulze-Ganzlin et al. teach most of the elements of the claimed invention, but do not teach but do not teach providing the power system with a plurality of low voltage power supplies with each power supply ranging from about 20 to about 50 kV.

Oettinger et al. teach a system for analysis with a portable x-ray device (10), wherein the housing (600, 700, 800) contains an integrated power system (118), said power system comprising a plurality of low voltage power supplies in the form of batteries (Abstract, Lines 8-10) to provide a light-weight compact structure (Paragraph 6, Lines 7-11) to allow the lightest weight configuration for the desired attenuation of x-rays (Paragraph 53). Examiner notes that batteries known to be used in such a power supply are capable of providing a power ranging from about 20 to about 50 kV, and that since it has been held that where the general conditions of a claim are disclosed in the

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prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233 (CCPA 1955).

It would have been obvious to one of ordinary skill at the time of the invention to incorporate the plurality of low voltage power supplies of Oettinger et al. in the system of Skillicorn et al. and Schulze-Ganzlin et al. to provide a light-weight and compact power source that is field-portable, as taught by Oettinger et al. (Paragraphs 6-7).

Claims 25-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skillicorn et al., as for Claim 1 above, and in view of U.S. Patent to Malcolm et al. (USP# 4,979,198).

With respect to Claims 25-27, Skillicorn et al. teaches most of the elements of the claimed invention, but does not teach a controllable display means integrated into the housing, external to the x-ray device.

Malcolm et al. teaches a portable x-ray device wherein there is a controllable display means (27, Column 5 Lines 59-68, and Column 6 Lines 1-11) directly coupled to the device (Column 6 Lines 6-11, and Figures 1 and 4), integrated into the housing and external to the device (Column 5, Lines 58-62), to allow direct viewing of image signals received (Column 5 Lines 58-62, and Column 6 Lines 6-11).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the controllable display means of Malcolm et al. in the device of Skillicorn et al. to allow direct viewing and image control as taught by Malcolm et al. (Column Lines 59-68, and Column 6 Lines 1-11).

With respect to Claims 28 and 30, Skillicorn et al. teaches a portable x-ray device comprising: a housing (12) containing an x-ray source (44); and detecting means structurally unattached to the housing (Column 3, Lines 11-13).

Skillicorn et al. does not teach a controllable display means comprising a portable electronic device.

Malcolm et al. teaches a portable x-ray device wherein there is a portable electronic controllable display means (27, Column 5 Lines 59-68, and Column 6 Lines 1-11) directly coupled to the device (Column 6 Lines 6-11, and Figures 1 and 4), integrated into the housing and external to the device (Column 5, Lines 58-62), to allow direct viewing of image signals received (Column 5 Lines 58-62, and Column 6 Lines 6-11).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the controllable display means of Malcolm et al. in the device of Skillicorn et al. to allow direct viewing and image control as taught by Malcolm et al. (Column Lines 59-68, and Column 6 Lines 1-11).

With respect to Claim 29, Malcolm et al. further teaches the portable electronic device enhances the image analysis of the x-ray device to produce images suitable for viewing (Column 5 Lines 49-68, and Column 6 Lines 1-11).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent Application Publication to Majjala (PGPUB# 2004/0146142)
regarding portable x-ray sources with unattached detectors.

U.S. Patents to: Morrison (USP# 2,063,329) regarding x-ray shielding materials,
Codina et al. (USP# 4,170,735) regarding portable x-ray units and power systems, U.S.
Patent to Skillicorn (USP# 4,646,338) regarding portable x-ray units, Mitani et al. (USP#
4,840,471) regarding x-ray shielding materials, Collier (USP# 5,166,965) regarding
portable x-ray units and power generation, and Polichar et al. (USP# 5,909,478)
regarding portable x-ray sources and detector with integrated display.


Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Anastasia Midkiff whose telephone number is 571-272-
5053. The examiner can normally be reached on M-F 7-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Edward Glick can be reached on 571-272-2490. The fax phone number for
the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the
Patent Application Information Retrieval (PAIR) system. Status information for
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you have questions on access to the Private PAIR system, contact the Electronic
Business Center (EBC) at 866-217-9197 (toll-free).

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